YUKUN MA

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EDUCATION

Vanderbilt University
Ph.D. in Economics   Aug, 2018 - May, 2024 expected

Peking University
M.A. in Economics   Aug, 2016 – May, 2018

Nankai University
B.A. in Physics   Aug, 2012 – May, 2016
B.A. in Finance

RESEARCH

Research Fields
Econometric theory and practice, nonparametric methods, high-dimensional data

Job Market Paper

"Identification-robust inference for the LATE with high-dimensional covariates" Yukun Ma

Abstract:
This paper investigates the local average treatment effect (LATE) with high-dimensional covariates, irrespective of the strength of identification. We propose a novel test statistic for the high-dimensional LATE, and demonstrate that our test has uniformly correct asymptotic size. By applying the DML method for estimating nuisance parameters, we develop easy-to-implement algorithms for inference and confidence interval calculation of the high-dimensional LATE. Simulations suggest that our test is efficient in the strongly identified LATE model.

Working Paper
"Doubly robust estimator with weak overleap" (joint with Pedro Sant'Anna, Yuya Sasaki, and Takuya Ura)

Abstract:
In this paper, we derive a new class of doubly robust estimators for treatment effect estimands that is also robust against weak covariate overlap. Our proposed estimator relies on trimming observations with extreme propensity scores and uses a bias correction device for trimming bias. Our framework accommodates many research designs, such as unconfoundedness, local treatment effects, and difference-in-differences. Simulation exercises illustrate that our proposed tools indeed have attractive finite sample properties, which are aligned with our theoretical asymptotic results.

"Dyadic Double/debiased ML for Analyzing determinants of free trade agreements" (joint with Harold Chiang, Joel Rodrigue, and Yuya Sasaki)

Abstract:
This paper presents novel methods and theories for estimation and inference about parameters in econometric models using machine learning for nuisance parameters estimation when data are dyadic. We propose a dyadic cross fitting method to remove over-fitting biases under arbitrary dyadic dependence. Together with the use of Neyman orthogonal scores, this novel cross fitting method enables root- consistent estimation and inference robustly against dyadic dependence. We illustrate an application of our general framework to high-dimensional network link formation models. With this method applied to empirical data of international economic networks, we reexamine determinants of free trade agreements (FTA) viewed as links formed in the dyad composed of world economies. We document that standard methods may lead to misleading conclusions for numerous classic determinants of FTA formation due to biased point estimates or standard errors which are too small.

Presentations
New York Camp Econometrics XV program (April 2021),
 Asian Meeting of Econometric Society (June 2021),
North American Summer Meeting (June 2021),
 73rd European Meeting of the Econometric Society (August 2021),
International Association of Applied Econometrics Annual Conference (June 2021),
Southern Economics Association 91st Annual Meeting (November 2021),
Midwest Economics Association 86th Annual Meeting (October 2022),
Chinese Economist Society North American Conference (March 2023),
NY Camp Econometrics XVII program (April 2023)
1st CIREQ Interdisciplinary Ph.D. Student Conference on Big Data and Artificial Intelligence (June 2023),
Asia Meeting of the Econometric Society (July 2023).

AWARDS AND FELLOWSHIPS

Vanderbilt University Graduate Fellowship	2018 – present
Kirk Dornbush Summer Research Grants	2021
Peking University Graduate Fellowship	2016 - 2018

PROFESSIONAL ACTIVITIES

Referee
Journal of Econometric Methods, Econometric Reviews

Teaching Assistant

Econ1500 Economic Statistics
Econ 6500 Statistical Analysis (M.A. Level)
Econ 8300 Statistical Analysis (Ph.D. Level)
Econ 1020 Principles of Microeconomics
Econ 8310 Econometrics

Econ 3035 Econometric Methods